Center of Comparative Medicine and Pathology
Research Animal Resource Center
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To: Principal Investigators and Staff Using Mouse Models
From: Rodolfo Ricart
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Re: Discovery of *Chlamydia muridarum* in select mouse colonies

We have recently detected *Chlamydia muridarum* (Cm) in select MSK mouse colonies, as well as in mice recently imported to MSK & WCM from major biomedical research centers including the University of California San Francisco, MD Anderson Cancer Center, and Washington University. Considering we receive over 200 mouse importations annually, it is likely Cm is prevalent in our MSK and WCM colonies, as well as many other institutions. This is a startling finding as Cm (previously referred to as the mouse pneumonitis agent) has not been described in laboratory mice since the 1940s, although Cm has been used extensively to model urogenital chlamydial disease caused by the human pathogen *Chlamydia trachomatis*.

We uncovered the presence of the bacterium through microbiome analysis of select mice in our colonies as well as elucidating the etiology of mild pulmonary lesions in mice in several of our colonies. We have developed a PCR assay in conjunction with a major US laboratory animal diagnostic laboratory and have begun testing all imported mouse strains as well as our MSK and WCM colonies.

We are sharing these preliminary findings as Cm is known to induce the host's innate and adaptive immune responses and can cause pulmonary lesions. As little is known about the biology of Cm in natural infections, we have initiated studies to better understand the pathophysiology of the bacterium, its impact on research models, and methods of eradication. The gastrointestinal track is presumed to be the primary site of colonization following fecal-oral transmission with subsequent colonization of the lung and potentially other tissues. There are likely to be differences in colonization and burden based on the mouse strain infected, with more significant burdens and tissue distribution in immunocompromised strains. We suspect that eradication of Cm should be straightforward, as Cm is sensitive to tetracycline-class antibiotics such as doxycycline. Please contact our Biosecurity email if you'd like to have your colony tested for Cm. As we have added Cm testing to our colony health monitoring program, we will better understand its distribution in MSK and WCM colonies in the coming months.

It is important to understand there is no other institution, nor commercial vendor, that currently tests their mice for Cm. We will provide additional information as it becomes available. We will be posting additional information on Cm on our websites shortly. Please contact us if you have additional questions.